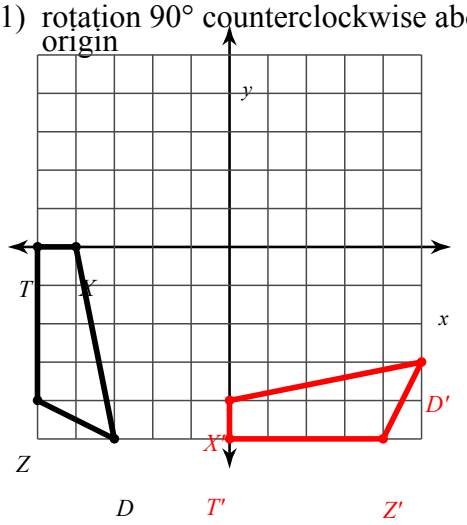
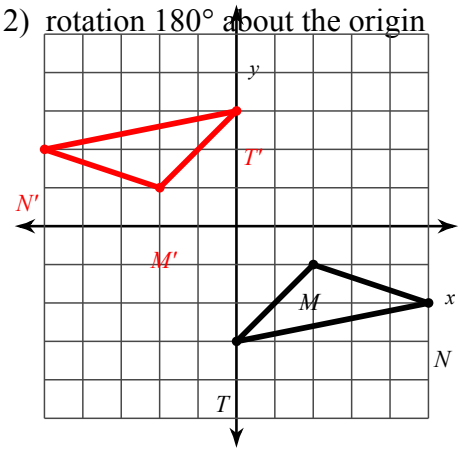
Practice 8.3 answers

Graph and label the image of the figure using the transformation given.

1) rotation 90° counterclockwise about the origin



2) rotation 180° about the origin



Find the coordinates of the vertices of each figure after the given transformation.

3) rotation 90° clockwise about the origin
$G(0, -3)$, $B(3, -1)$, $U(1, -5)$

$G'(-3, 0)$, $B'(-1, -3)$, $U'(-5, -1)$

4) rotation 90° clockwise about the origin
$R(1, 1)$, $F(5, 4)$, $H(3, 1)$

$R'(1, -1)$, $F'(4, -5)$, $H'(1, -3)$

#s 3 and 4: Use the rule for a counterclockwise translation of 270 degrees: (x,y) --> (y, -x)

5) rotation 180° about the origin
$I(1, 3)$, $F(5, 5)$, $C(4, 2)$

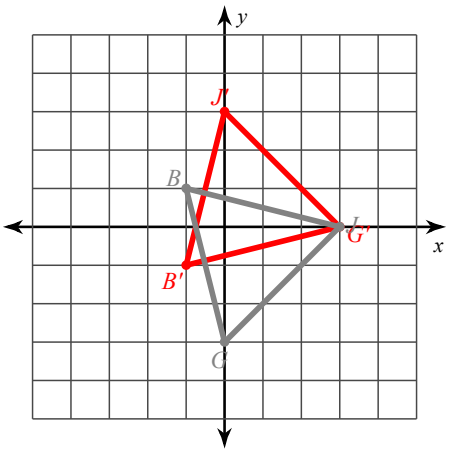
$I'(-1, -3)$, $F'(-5, -5)$, $C'(-4, -2)$
Use (x,y) --> (-x,-y)

6) rotation 90° counterclockwise about the origin
$I(-5, 1)$, $X(-4, 5)$, $Q(-2, 0)$

$I'(-1, -5)$, $X'(-5, -4)$, $Q'(0, -2)$
Use (x,y) --> (-y, x)

Graph the image and the preimage of the figure using the transformation given.

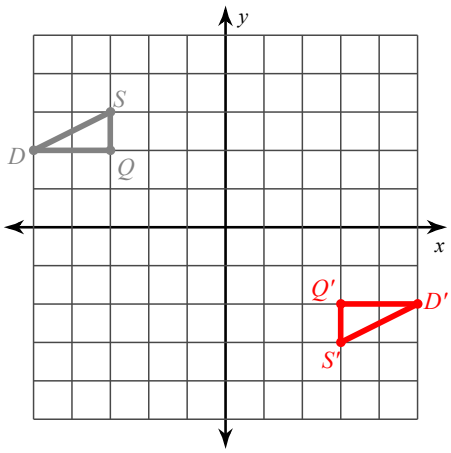
7) rotation 90° counterclockwise about the origin
$G(0, -3), B(-1, 1), J(3, 0)$



Use (x,y) --> (-y, x)

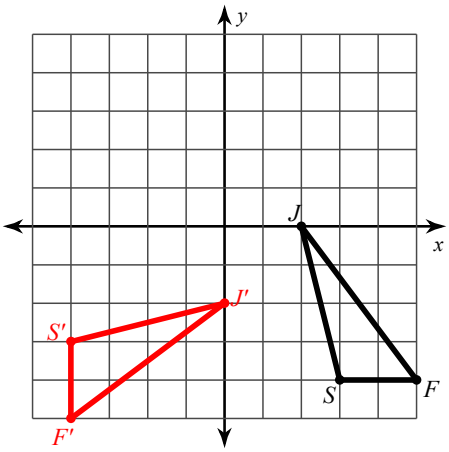
8) rotation 180° about the origin
$D(-5, 2), S(-3, 3), Q(-3, 2)$

Use (x,y) --> (-x,-y)



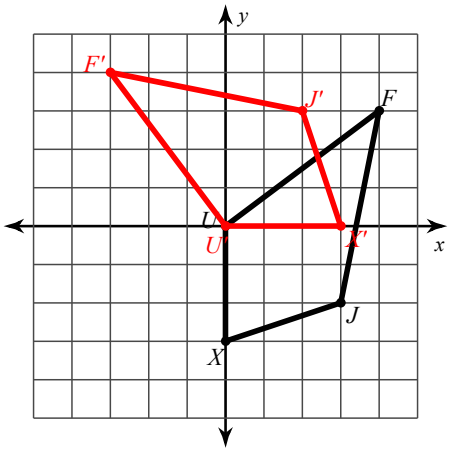
Graph the image and the preimage of the figure using the transformation given.

9) rotation 90° clockwise about the origin



This is the same as a counterclockwise rotation of 270 degrees: (x,y) --> (y, -x)

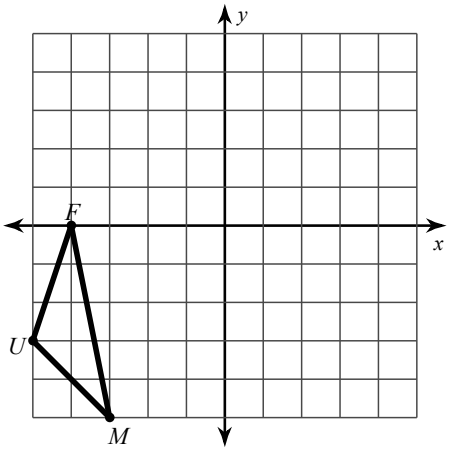
10) rotation 90° counterclockwise about the origin



Use (x,y) --> (-y, x)

Find the coordinates of the vertices of each figure after the given transformation. Then graph the reflection.

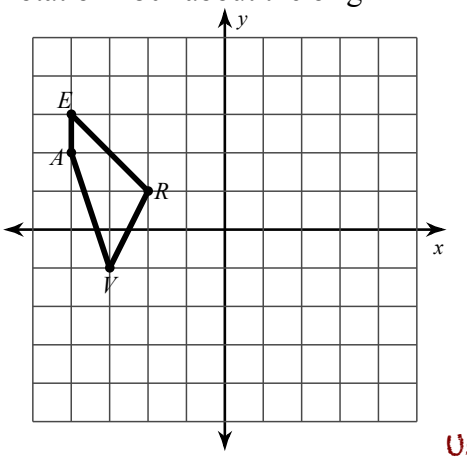
11) rotation 90° clockwise about the origin



$U'(-3, 5), F'(0, 4), M'(-5, 3)$

(x,y) --> (y, -x)

12) rotation 180° about the origin



Use (x,y) --> (-x,-y)

$A'(4, -2), E'(4, -3), R'(2, -1), V'(3, 1)$

13) rotation 90° counterclockwise about the origin

$U(2, -4), I(0, -1), C(2, -1), E(5, -3)$

$U'(4, 2), I'(1, 0), C'(1, 2), E'(3, 5)$

Use (x,y) --> (-y, x)

14) rotation 180° about the origin

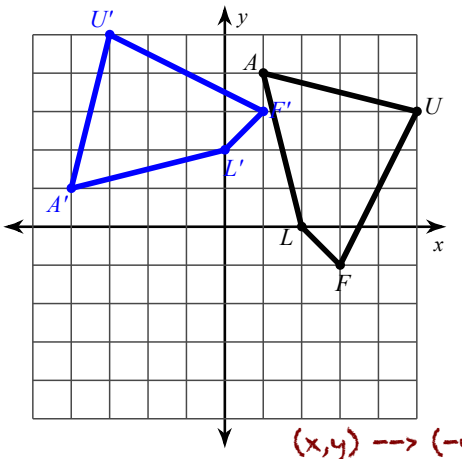
$F(4, -3), D(3, 0), V(5, 0), E(5, -4)$

$F'(-4, 3), D'(-3, 0), V'(-5, 0), E'(-5, 4)$

Use (x,y) --> (-x,-y)

Tell the type of reflection that describes each transformation.

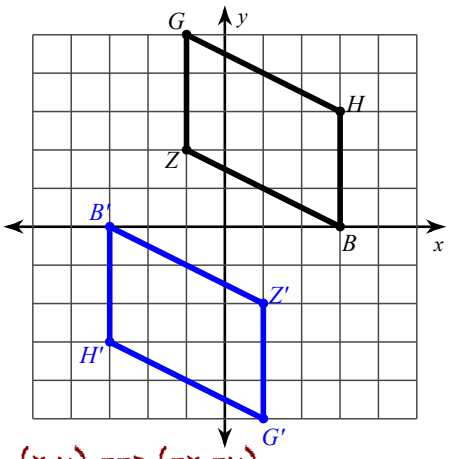
15)



(x,y) --> (-y, x)

rotation 90° counterclockwise about the origin

16)



(x,y) --> (-x,-y)

rotation 180° about the origin

17) $F(1, 0), N(1, 3), V(2, 4), U(3, 4)$

to

$F'(-1, 0), N'(-1, -3), V'(-2, -4), U'(-3, -4)$

rotation 180° about the origin

(x,y) --> (-x,-y)

18) $Q(-3, 1), A(-4, 3), I(-2, 4), E(0, 4)$

to

$Q'(1, 3), A'(3, 4), I'(4, 2), E'(4, 0)$

rotation 90° clockwise about the origin

(x,y) --> (y, -x)